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Dean S. Thompson

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EXAMINER

KENNEDY, ADRIAN L

ART UNIT

PAPER NUMBER

2129

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/645,982	<b>Applicant(s)</b> THOMPSON, DEAN S.	
	<b>Examiner</b> ADRIAN L. KENNEDY	<b>Art Unit</b> 2129	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-8,10-12,14-19 and 21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,4-8,10-12,14-19 and 21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 August 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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***Examiner's Detailed Office Action***

1. This Office Action is responsive to **Amendment After Non-Final** filed **February 5, 2009**.
2. **Claim 1, 4-8, 10-12, 14-19, and 21** will be examined.

***Claim Rejections - 35 USC § 101***

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1, 4-8, 10-12, 14-19, and 21 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Specifically, the claimed invention is rejected due to the fact that it is (1) not tied to another statutory class (such as a particular apparatus), nor does it (2) transform underlying subject matter to a different state or thing.

The claims must to provide a tangible result, and there must be a practical application, by either

- 1) transforming (physical thing) or
- 2) by having the FINAL RESULT (not the steps) achieve or produce  
a useful (specific, substantial, AND credible),  
concrete (substantially repeatable/non-unpredictable), AND  
tangible (real world/non-abstract) result.

A claim that is so broad that it reads on both statutory and non-statutory subject matter, must be amended. A claim that recites a computer that solely calculates a mathematical formula is not statutory.

However, the portions of the opinions in State Street and AT&T relying solely on a “useful, concrete and tangible” result analysis should no longer be relied on. Ex parte Bilski, Appeal No. 2007-1130 (Fed. Cir. October 30, 2008).

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The court has said that there's a two-pronged test to determine whether a software or business method process patent is valid: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing. In other words, pure software or business method patents that are neither tied to a specific machine nor change something into a different state are not patentable. *Ex parte Bilski*, Appeal No. 2007-1130 (Fed. Cir. October 30, 2008).

The body of the claims needs to be tied to a statutory class and produce a concrete, useful and tangible result. For example, how is a computer program solving a problem observable and useful in the real world?

[In *Abele*], we held unpatentable a broad independent claim reciting a process of graphically displaying variances of data from average values. *Abele*, 684 F.2d at 909. **That claim did not specify any particular type or nature of data; nor did it specify how or from where the data was obtained or what the data represented.** *Id.*; ... In contrast, we held one of *Abele*'s dependent claims to be drawn to patent-eligible subject matter where it specified that “said data is X-ray attenuation data produced in a two dimensional field by a computed tomography scanner.” *Abele*, 684 F.2d at 908-09. This data clearly represented physical and tangible objects, namely the structure of bones, organs, and other body tissues. Thus, the transformation of that raw data into a particular visual depiction of a physical object on a display was sufficient to render that more narrowly-claimed process patent-eligible.

... So long as the claimed process is limited to a practical application of a fundamental principle to transform **specific** data, and the claim is limited to a **visual depiction that represents specific physical objects or substances**, there is no danger that the scope of the claim would wholly pre-empt all uses of the principle.

This court and our predecessor court have frequently stated that adding a data-gathering step to an algorithm is insufficient to convert that algorithm into a patent-eligible process. *E.g.*, *Grams*, 888 F.2d at 840 (step of “deriv[ing] data for the algorithm will not render the claim statutory”); *Meyer*, 688 F.2d at 794 (“[data-gathering] step[s] cannot make an otherwise nonstatutory claim statutory”). ... **A requirement simply that data inputs be gathered—without specifying how—is a meaningless limit** on a claim to an algorithm because every algorithm inherently requires the gathering of data inputs. *Grams*, 888 F.2d

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at 839-40. Further, the inherent step of gathering data can also fairly be characterized as **insignificant extra-solution activity**. See *Flook*, 437 U.S. at 590. (See *In re Bilski*, 88 USPQ2d 1397-1398, emphasis added)

Based on this guidance, examiner finds that the claimed method does not specify any particular type of machine for implementing the claimed invention. *In re Bilski*, 88 USPQ2d 1397-1398 quoting *Grams* and *Flook*.

As a corollary, the *Diehr* Court also held that **mere field-of-use limitations are generally insufficient** to render an otherwise ineligible process claim patent-eligible. See 450 U.S. at 191-92 (noting that ineligibility under §101 “cannot be circumvented by attempting to limit the use of the formula to a particular technological environment”). ... Pre-emption of all uses of a fundamental principle in all fields and pre-emption of all uses of the principle in **only one field** both indicate that the claim is **not limited to a particular application** of the principle. See *Diehr*, 450 U.S. at 193 n.14 (“A mathematical formula *in the abstract* is nonstatutory subject matter regardless of whether the patent is intended to cover all uses of the formula or only limited uses.”) (emphasis added). ...

The *Diehr* Court also reaffirmed a second corollary to the machine-or-transformation test by stating that “insignificant postsolution activity will **not** transform an unpatentable principle into a patentable process.” *Id.* at 191-92; see also *Flook*, 437 U.S. at 590 (“The notion that post-solution activity, no matter how conventional or obvious in itself, can transform an unpatentable principle into a patentable process exalts form over substance.”). The Court in *Flook* reasoned:

A competent draftsman could attach some form of post-solution activity to almost any mathematical formula; the Pythagorean theorem would **not** have been patentable, or partially patentable, because a patent application contained a final step indicating that the formula, when solved, could be usefully applied to existing surveying techniques.

437 U.S. at 590. Therefore, **even if** a claim recites a specific machine or a particular transformation of a specific article, the recited machine or transformation **must not constitute mere “insignificant postsolution activity.”** (See *In re Bilski*, 88 USPQ2d 1393, emphasis added)

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8, 10-14 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over

**Akkiraju et al.** (USPubN 2001/0013027, referred to as Akkiraju).

Regarding claim 1:

Akkiraju teaches,

defining a set of traits in which each trait characterizes a portion of a solution algorithm to the problem (Akkiraju: ¶ 0023; Examiner's Note(EN): The examiner takes the position that in not further defining the claimed "traits" in the claimed invention, or how the claimed "traits" "characterize" a portion of the solution, that the claimed "traits" read on the decompositions of candidate solutions as taught by Akkiraju. Furthermore, the examiner takes the position that it would have been obvious to one of ordinary skill in the art that a decomposition of a candidate solution would inherently "characterize" a portion of said candidate solution.);

defining a programming interface for at least one of the traits (Akkiraju: ¶ 0024; EN: The examiner takes the position that while Akkiraju does not explicitly recite defining a "programming interface", the defining of a "programming interface" is inherently defined for the decompositions taught by Akkiraju. This position is supported by the fact that at

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the time of the applicant's claimed invention it was of ordinary skill in the art that a "programming interface" is defined when a method is computer implemented (e.g. using software), depending on the computer, programming language, library, and/or services being used to implement said method, and Akkiraju teaching that his invention is computer implemented.);

providing at two implementations for at least one of the defined programming interfaces (Akkiraju: ¶ 0024; EN: The examiner takes the position that the applicant's claimed "providing" of at least two implementations is inherent in the invention of Akkiraju. This position is supported by the fact that the computer implemented method of Akkiraju contains "programming interfaces", and "programming interfaces" inherently have explicitly or implicitly defined implementations for each of the said "interfaces". This position is further supported by the fact that it was obvious to one of ordinary skill in the art at the time of applicant's claimed invention that "programming interfaces" are nothing more than function, method, variable or procedure declarations and that function, variables, methods, variable, and procedure declarations inherently have implementations (even if the declaration is null by default). Finally, the examiner has found that in not distinctly claiming what the "implementation" includes, that the "implementation" could be nothing more than providing the code for the "defined programming interfaces", which would have been obvious to one of ordinary skill in the art at the time of invention when teaching (or suggesting) a computer implemented method.);

specifying a subtrait associated with at least one of the traits or the implementations (Akkiraju: ¶ 0024; EN: Having not further defined the applicant's claimed "subtrait" in

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the claimed invention, the examiner has found that the claimed "subtraits" read on the sub-problems taught by Akkiraju. Additionally, the examiner asserts that it would have been obvious to one of ordinary skill in the art at the time invention that the sub-problems (i.e. "subtraits") taught by Akkiraju are associated with the problems taught in his invention.);

selecting from the set of traits a top-level trait that represents a solution to the problem (Akkiraju: ¶ 0031; EN: Having not further defined the applicant's claimed "top-level trait" in the claimed invention, the examiner has found that the claimed "top-level trait" reads on the problem taught by Akkiraju. Additionally, the examiner takes the position that the claimed "top-level trait" is no different from the previously claimed "trait".); selecting a top-level implementation for the top-level trait from the at least two implementations (EN: The examiner takes the position that a "top-level trait" inherently has a "top-level implementation". This position is based on the applicant previously claiming that a "trait" has an "implementation". Additionally, the examiner asserts that the applicant's claimed "top-level trait" would have been obvious to one of ordinary skill in the art, in light of Akkiraju teaching a problem having sub-problems and it being inherent that a problem with sub-problems would be a "top level" problem. Finally, the examiner previously established that an "implementation" is inherent in the invention of Akkiraju.);

selecting an implementation from a set of provided implementations for each subtrait required for the top-level trait or the top-level implementation (EN: The examiner takes the position that selecting an "implementation" for the "trait" is inherent in the invention



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of Akkiraju. This position is supported by the examiner assertion that a “subtrait” reads on the sub-problems taught by Akkiraju, and the previously presented argument that all problems whether they are “top-level” or sub-problems, inherently have an “implementation”.);

recursively selecting an implementation for each subtrait associated with at least one of the traits or the implementations in order to construct (Akkiraju: ¶ 0024; EN: The examiner takes the position that the applicant's claimed process of “recursively selecting” reads on the process of decomposing a problem into a first set of sub-problems, and then decomposing said first set of sub-problem into a second set of sub-problems, as taught by Akkiraju. Furthermore, while Akkiraju does not explicitly recite the construction of problem hierarchy (i.e. “trait hierarchy”), the examiner asserts that it would have been obvious to one of ordinary skill in the art that sub-problems decomposed from a higher level of sub-problems, which were decomposed from a problem would inherently form a problem hierarchy.) a computer program for solving the problem that comprises a trait hierarchy (Akkiraju: ¶ 0021 and 0024; EN: The examiner takes the position that it would have been obvious to one of ordinary skill in the art at the time invention that the method taught by Akkiraju inherently forms a computer program. This position is based on Akkiraju teaching that his method is computer implemented.)

implementing an evaluation module that execute the constructed computer program in order to determine its effectiveness in solving the problem and applying an optimization technique that carries out the method steps for constructing the computer program to generate at least one computer program that solves the problem (Akkiraju: ¶ 0021, 0031),

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and that uses feedback from the evaluation module to automatically generate at least one additional computer program that better solves the problem by replacing at least one implementation with an alternate implementation (Akkiraju: ¶ 0033; EN: The examiner takes the position that the applicant's claimed use of feedback reads on the optimization process taught by Akkiraju. This position is supported by the fact that Akkiraju uses multiple optimization runs to replace previous less optimal solutions to a problem.) (Regarding the "implementing", the examiner takes the official position that the "implementing" using a module is a non-computer implemented method claim is an improper mixing of statutory classes. However, in order to facilitate compact prosecution, this portion of the independent claim has been examiner with regard to the prior art. Appropriate correction is required.).

It would have been obvious to one of ordinary skill in the art at the time of invention to apply the optimization method of Akkiraju to the system and method of optimizing taught by Thompson, for the purpose solving a problem (Akkiraju: ¶ 0001).

Regarding claim 4:

Akkiraju teaches,

(currently amended) The computer program constructing method wherein an implementation is provided for each computer programming interface (EN: The examiner previously established that providing "an implementation") would have been inherent in the invention of Akkiraju.).

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Regarding claim 5:

Akkiraju teaches,

(original) The computer program constructing method wherein the subtrait comprises a plurality of subtraits (Akkiraju: ¶ 0024; EN: The examiner takes the position that the applicant's claiming of a "subtrait" comprising a plurality of "subtraits" would have been obvious to one of ordinary skill in the art, in light of Akkiraju teach that his sub-problem are decomposed into a plurality of sub-problems.).

Regarding claim 6:

Akkiraju teaches,

(original) The computer program constructing method wherein the subtrait comprises a plurality of subtraits (Akkiraju: ¶ 0024; EN: The examiner takes the position that the applicant's claiming of a "subtrait" comprising a plurality of "subtraits" would have been obvious to one of ordinary skill in the art, in light of Akkiraju teach that his sub-problem are decomposed into a plurality of sub-problems.).

Regarding claim 7:

Akkiraju teaches,

(original) The computer program constructing method wherein the top-level trait comprises a plurality of top-level traits (Akkiraju: EN: The examiner takes the position that if a "top-level trait" is below another "top-level trait" the second "top level trait" it is no longer a "top-level trait". If the applicant wishes to disagree with the examiner's

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position, the examiner respectfully requests that the applicant explain his or her position in subsequent communications.).

Regarding claim 8:

Akkiraju teaches,

(original) The computer program constructing method wherein the top-level trait comprises a plurality of top-level traits (Akkiraju: EN: The examiner takes the position that if a "top-level trait" is below another "top-level trait" the second "top level trait" it is no longer a "top-level trait". If the applicant wishes to disagree with the examiner's position, the examiner respectfully requests that the applicant explain his or her position in subsequent communications.).

Regarding claim 10:

Akkiraju teaches,

(original) The computer program constructing method wherein the subtraits are associated with at least one of the traits, the implementation, or both (Akkiraju: EN: The examiner previously established that the applicant's "subtraits" read on the sub-problems taught by Akkiraju, and that said sub-problem are inherently "associated with" problems.).

Regarding claim 11:

Akkiraju teaches,

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(original) The computer program constructing method wherein the subtrait is one of the defined set of traits (Akkiraju: EN: The examiner takes the position that it would have been obvious to one of ordinary skill in the art at the time of invention, that the claimed “subtrait” is one of the defined “traits”. This position is based on the fact that the applicant did not previously define the “subtrait”, so both the "subtrait" and "top-level" trait would have to be one of the previously defined "traits". Furthermore, the examiner asserts that the applicant's claimed "subtrait" reads on the sub-problem associated with the defined problem, as taught by Akkiraju.).

Regarding claim 12:

Akkiraju teaches,

(original) The computer program constructing method wherein the subtraits associated with the traits, the implementation, or both (Akkiraju: EN: The examiner previously established that the applicant’s “subtraits” read on the sub-problems taught by Akkiraju, and that said sub-problem are inherently “associated with” problems.).

Regarding claim 13:

Akkiraju teaches,

implementing an evaluation module that executes a constructed computer program in order to determine its effectiveness in solving the problem (Akkiraju: EN: The examiner takes the position that the execution of a constructed computer program would have been

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inherent in the invention of Akkiraju in light of him teaching that his method is computer implemented.); and

applying an optimization technique that carries out the steps of claim 1 to generate at least one computer program that solves the problem, and that uses feedback from the evaluation module to generate at least one additional computer program that better solves the problem (Akkiraju: ¶ 0035; EN: The examiner takes the position that the applicant's claimed use of optimization and said optimization using feedback, reads on the use of an optimization and said optimization using the correctness objective function for the various sub-problems when generating the sub-problem and sub-sub-problem.).

Regarding claim 14:

Akkiraju teaches,

(currently amended) The computer program constructing method wherein the optimization technique is selected from the group consisting of simulated annealing, an evolutionary algorithm, and a particle swarm optimization (Akkiraju: ¶ 0088).

Regarding claim 21:

Akkiraju teaches,

(new) The computer program constructing method wherein the problem is a financial management problem and the traits and subtraits are financial management data (Akkiraju: ¶ 0004; EN: The examiner takes the position that the applicant's claiming of

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the problem relating to “financial management” reads on the maximization of return on investment and profitability as taught by Akkiraju).

### ***Response to Arguments***

Applicant's arguments filed on February 5, 2009 have been fully considered but are moot in light of the new grounds of rejection set forth above.

In reference to Applicant's argument:

The claims, as presently amended, satisfy the second prong of the Bilski test since they transform a tangible article into a different state.

Examiner's response:

The examiner has considered the applicant's argument and has found them to be non-persuasive. The examiner has applied a broadest reasonable interpretation of the claim language and has found that the claimed "method" only constructs a computer program, but does not even claim the use of a computer or computer readable medium when constructing the aforementioned computer program. Therefore, the examiner asserts that the claimed invention can be practiced by a user sitting at a desk with a sheet of paper. While a user being part of the inventive method does not eliminate patent eligibility, the current interpretation of 101 does require that the method be 1) tied to another statutory class or transformed information to a different state. Furthermore, the examiner has found 1) no indication that the applicant is dealing with real world data (i.e. non-abstract) and 2) no recitation that prevents the various selecting, defining, specifying and other operations as being interpreted as merely manipulation of data which would

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make the claimed invention software per se. Finally, the examiner respectfully request that the applicant indicate in further correspondence what recitations in the independent claim classifies as the argued “tangible article” and what the “different state” that the “tangible article” is transformed into is.

In reference to Applicant's argument:

Akkiraju, however, decomposing the "problem" into "subproblems". This is fundamentally different from the trait hierarchy, which is a decomposition of a solution - particular computer program for solving the problem.

Examiner's response:

The examiner has considered the applicant's argument and has found them to be non-persuasive. This position is based on the fact that the applicant explicitly recites in paragraph 0065 that the invention starts by “enumerating at least one trait for a given **problem**” (Emphasis added by examiner), as opposed to enumerating at least one trait for a given solution.

Furthermore, based on this recitation the examiner asserts that the applicant's "traits" and "trait hierarchy" while characterizing portions of a solution, are characterization of the solution from the perspective of the originally enumerated problems. Therefore, the examiner asserts that it would not have been possible to characterize the solution to the enumerated problem without inherently characterizing the problem which the solutions aim to solve. Additionally, the examiner respectfully request an indication in the applicant's disclosure as to how an enumerated problem becomes a plurality of solutions and sub-solution (i.e. traits and subtraits) without decomposing the originally enumerated problems into problems and subproblems (as taught Akkiraju).



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In reference to Applicant's argument:

Applicant acknowledges that both decompositions are hierarchical, but – as disclosed in the “Background of the Invention” section – decomposition into a hierarchy is in itself, an old and well-known approach.

Akkiraju teaches “A computer implemented optimization method” comprising the steps of “decomposing an optimization problem into a first plurality of sub-problems.” This specifically refers to decomposing a problem. It does not however, teach the use of any hierarchical decomposition of anything on a computer as suggested by the Examiner.

Examiner's response:

The examiner has considered the applicant's argument and has found them to be non-persuasive. This position is based on the applicant's previous argument that “both decompositions are hierarchical” and that **“decomposition into a hierarchy is in itself, an old and well-known approach”**.

### *Conclusion*

Examiner's Opinion:

The examiner has considered the applicant's arguments in light of the claimed invention. Furthermore, the examiner respectfully reminds the applicant that **“during examination, the claims must be interpreted as broadly as their terms reasonably allow”**. (MPEP 2111.01 [R-5] I)

It is the goal of the Examiner to move the applicant's claimed invention towards allowability. However, as presently claimed, the applicant's claimed invention is substantially broad and is broad enough to read on the prior art of record. The examiner

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respectfully request that the applicant consider what the invention is, and where the line between the prior art (cited by the examiner and/or known by the applicant) and the applicant's intended invention lay. This request is made so the examiner can help the applicant arrive at claim language that not only traverses the language taught in the presently pending and/or previously disclosed prior art, but also traverses concepts taught (or suggested) in prior art known by the examiner and/or applicant which has not been cited. Also, the examiner is more than willing to have an interview with applicant, but requests that the applicant disclose what he or she considers to be the most inventive portion of the claimed and/or disclosed invention.

- Regarding 101, the examiner takes the position that as broadly as the current invention is claimed, reads on nothing more than a user sitting at a computer typing code that will “solve a problem for a user”. Furthermore, without 1) being explicitly tied to another statutory class or 2) transforming some underlying subject matter to a different state or thing the claimed invention does not qualify as a patent eligible process (i.e. method) under Bilski. Additionally, without produces a concrete useful and tangible result the claimed invention does not meet the base requirements for patent eligibility under 101. Finally, in attempting to claim both disclosed and non-disclosed “problems” the applicant has attempted to preempt existing current application and non-existent future applications of the claimed invention which is not allowable under current patent eligibility standards.

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- Regarding the invention in general, the examiner asserts that the language of the independent claims is broad enough to read on the broad software development process used by any software engineer who is developing an object oriented program that "solves a problem for a user" and the specific construction of a neural network hierarchy that uses evolutionary algorithm based methods. Additionally, due to the breadth of scope, it is the examiner's opinion that the claimed invention of the independent claims does not adequately describe the novel portions of that claimed invention. Finally, while the examiner respects the applicant's ability to act as his own lexicographer, the examiner asserts that using various "implementations", and "interfaces" would have obvious to one of ordinary skill in the art, especially in light of it being known that different data types, objects, classes, interfaces, etc., need varying "implementations" and "interfaces" to interact with other portions of a computer program.
- Regarding the applicant's claimed use of "traits", the examiner asserts that "traits" and "trait implementations" are no different from functions, methods, or variables as they would have been known in the prior art.
- The examiner respectfully requests that should the applicant submit further correspondence, that the applicant contact the examiner prior to said submittal. This contact should be made to schedule a telephonic or in person interview with the examiner, applicant's representative and if necessary the applicant. Additionally, this contact should be made in an effort to move the claim language away from broad software coding concepts which would have been known at the

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time of invention and more towards the novel portions of the claimed invention.

Should the applicant choose to amend, the Examiner respectfully suggests that the applicant more explicitly recite what the applicant considers to be the most novel portion of the disclosed invention in the claimed invention. (The previously cited suggestions are not a recitation of allowable subject matter, but are rather subject matter disclosed/claimed by the applicant which will help further distinguish the claimed invention from the prior art. Furthermore, any amendment will require further searching of the prior art.).

Claims 1, 4-8, 10-12, 14-19 and 21 are rejected.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adrian L. Kennedy whose telephone number is (571) 270-1505. The examiner can normally be reached on Mon -Fri 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Vincent can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/ALK/

/David R Vincent/

Supervisory Patent Examiner,

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